Periscope.

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1. *Multiple Sclerosis.*—Hoffmann contributes a careful analysis of the literature of multiple sclerosis, partly illustrated by his own experience—which includes the observation of more than 100 cases—and three microscopical studies of the central nervous system. The etiology is not clear. The disease occurs most frequently between the ages of 18 and 35, equally in men and women, most frequently among the laboring class, and occupation appears to be without particular influence. Hoffmann is not inclined to lay great stress upon the hypothesis that the disease follows infection. In his own cases infectious diseases preceded the symptoms in 5 per cent. of the cases. Syphilis plays no part. The metallic poisons have been supposed to have influence; in his 100 cases there was but one in which the occupation brought the patient into contact with lead. Alcohol, dissipation, etc., do not appear to play any particular part. Exposure to cold, especially associated with dampness has been supposed to play an important rôle. In Hoffmann's cases there were 13 who gave such an history, but only 4 in which some other etiological factor was not accused. Emotional disturbance, parturition and injury have also been supposed to play important parts. Hoffmann is inclined to believe that they tend to make the disease worse when it actually exists, although in his 100 cases 13 gave the history of severe injury. However, in more than one-half of all cases no etiological factor can be determined. The symptomatology of the disease is exceedingly variable. Mentally there is diminution of intelligence, and perhaps symptoms simulating paralytic dementia. Occasionally there are attacks of Jacksonian epilepsy. The speech defects are scansion, dysarthria, aphasia, etc. The motor defects consist of hemi-pareses, paralyses, mono-paresis or paralysis in the distribution of a single motor nerve. The patients may have palpitation of the heart, vomiting, dyspnea, glycosuria and polyuria. The symptoms may simulate those of bulbar paralysis, or there may be symptoms of paralysis agitans, including vertigo, pro- and retro-pulsion, etc. In 54 per cent. of his cases Hoffmann observed disturbance of speech; in 64 per cent., vertigo; in 6 per cent. there were gastric crises associated with vomiting. There may be disturbance of sight involving one or both eyes, disturbance of the eye mus-

cles. There may be swelling of the papillæ observed by Hoffmann in 50 per cent. of his cases. Nystagmus was present in 56 per cent. of his cases. Ataxia of the iris or intention tremor of the iris has been described as a rare symptom. Disturbance of smell and taste are rare; disturbance of hearing is slightly more common. The spinal symptoms are particularly those involving the motor tracts. They are usually spastic, although flaccid paralysese with loss of the tendon tremor may occur. Intention tremor occurred in 71 per cent. of Hoffmann's cases. Swaying when standing with the eyes open is also fairly common. Various symptoms of paresthesia occurred in 66 per cent. of Hoffmann's cases. Objective hypesthesia with anesthesia, and occasionally disturbance of the stereognostic sense are also frequently present. In the majority of cases the tendon reflexes are exaggerated. The skin reflexes vary considerably. The abdominal reflex was absent in 29 per cent. of Hoffman's cases. Babinski's reflex is frequently present. In 60 per cent. of Hoffmann's cases there was disturbance in urination. Impotency occurred in 2 cases; conception was apparently not affected. Vasomotor changes are rare; muscular atrophies are also rare, but do occur. The course is variable. From time to time patients have remissions that usually are followed by a fresh increase. The diagnosis in the early stages is excessively difficult. Hoffmann mentions 23 other diseases that may be confused with multiple sclerosis. Cure is practically unknown, at least it is not certain. The prognosis is therefore unfavorable. The duration of the disease varies from 2 months to 20 years. Treatment consists in avoidance of other injurious factors, rest, moderate hydrotherapy, and the administration of certain drugs, particularly quinine, potassium iodide, nitrate of silver, strychnine, antipyrin, salicylic acid, ergotin, arsenic, etc., bath cures of various kinds, and mercurial inunctions, which in Hoffmann's experience usually make the case worse. The pathological anatomy is variable. There are changes in the vascular system, in the neuroglia and in the true nervous elements. No satisfactory explanation of these changes has been given. The majority of authors believe that the process is inflammatory; a few look upon it as a form of gliosis, perhaps congenital in type. Hoffmann does not believe that we are in a position to determine in which of the elements of the central nervous system the process actually arises.

2. *Hemiathetosis.*—Haenel reports the case of a man twenty-one years of age who had always been paralyzed on the left side. At the age of twenty he had contracted syphilis, and some months afterward developed cough, expectoration, emaciation and night sweats. The physical examination showed no motor nor sensory disturbances excepting slight sluggishness in mimicry on the left side. The left arm was somewhat smaller, kept in a position of slight flexion, and in continual athetoid movements. It was possible to control these only for a brief interval of time. The muscles were spastic; the tendon reflexes could not be elicited; the left leg was also atrophic. There was pesequinovaris, no athetosis, and fair control of voluntary movement. The patellar reflex was weak on the right side, and absent on the left side. Sensation was normal in both arms and legs. The patient had a tuberculous cavity in the lung from which he died. The autopsy showed the presence of an old focal lesion in the subthalamic region which had produced almost complete destruction of the right crus, and which extended from the right internal geniculate ganglion as far as the surface of the posterior corpora quadrigemina. It appeared to have been a vascular rather than an inflammatory process. The pyramidal tract for the left side of the body was absent. There were however, certain groups of fibers not normally present that could be distinguished in the dorsal portion of the

pyramidal tract in the medulla, particularly two groups which Haenel describes very carefully. He believes that there can be no doubt that these fibers were newly formed on account of their situation and general appearance. The source of these fibers was not clearly made out, but it is possible that they came from the pyramidal tract belonging to the other side. The case appears to prove the contention of Bonhoffer, that in cases of athetosis the subthalamic region must be involved. It was difficult to understand why atrophy should occur, although it is known that it almost invariably does occur, and it is also difficult to understand why spasticity was not present in the legs. No atrophic condition was found in the brain cortex.

3. *Tumor of Cerebellum.*—Von Foss reports five cases of cerebellar tumor. The first, a woman thirty-five years of age, a year before her death began to have severe headaches. On one occasion she became unconscious and was paralyzed in three extremities. Later these three paralyzed extremities frequently showed clonic convulsions. She developed vomiting, gradual loss of vision, her gait became uncertain, there were athetoid movements in the right hand and ataxia of the left hand with loss of the stereognostic sense. Argyll-Robertson pupils were present, and from time to time attacks of complete paralysis of one or more extremities. A diagnosis of cerebellar tumor was made and an operation performed, 4 days after which the patient died. At the autopsy a tumor was found in the posterior portion of the fourth ventricle with marked dilatation of the central canal, in the cervical position of the cord. The tumor was an angio-sarcoma. The second case, a woman 34 years of age, whose sight became bad about three months before admission to the hospital. There was nystagmus, some paresis in the right shoulder, diminution of sensation in the distribution of the left trigeminus, and persistent headache. Mercurial inunctions did not produce any improvement. The patient died and at the autopsy a tumor was found springing from the anterior surface of the right tentorium. Microscopically it was an endothelioma which could have been readily removed by operation. A similar tumor was found in the liver. The third case, a man twenty years of age, had had headaches for two years, which had developed two years after a severe fall from a horse. He was drowsy, appeared somewhat demented; there was enlargement of the cervical glands posteriorly, diminution in vision, inequality of the pupils, no paresis, slight ataxia of the extremities, and disturbance of gait. The patient improved somewhat on antisyphilitic treatment. The fourth patient, a man nineteen years of age, had headache for about 6 months. Towards the end of this period his vision diminished and he became finally completely blind. There was also deafness in the right ear, evidently of nervous origin, loss of smell on the right side, and the muscles of the lower extremities were hypotonic. The reflexes were lost with the exception of the Achilles tendon reflex; sensation was normal. Lumbar puncture was negative. The patient from time to time had attacks of vertigo and left the hospital, dying a short time afterwards. No autopsy was obtained. The fifth patient, a man 21 years of age, for five years an excessive drinker, had an attack in which he lost consciousness, then had severe headaches, vertigo tintitus, weakness of the legs and vomiting. His mind became somewhat weaker, there was diminution of vision, irregular gait, normal tendon reflexes and increased skin reflexes. Slight hyperalgesia and slight albuminuria were present. The patient improved in his symptoms upon potassium iodide, but the motor disturbances grew worse and he died. Autopsy was not obtained. Von Foss gives a valuable table of the symptoms of these five cases, and some of these symptoms are of considerable interest. For instance, the giving way of

the legs, the atypical disturbance of gait, and the rapidly fatal course of the two last cases. In three of these cases there was rigidity of the muscles of the neck, a symptom upon which Oppenheim lays particular stress.

4. *Disseminated Sclerosis.*—Bikeles reports the case of a man forty-five years of age, who at the age of twenty had syphilitic infection. From that time he was healthy until a few months before his death, when he had severe pains in the lower portion of the abdomen, sometimes associated with eructations and vomiting. There was difficulty in the retention of urine, some disturbance of gait with a feeling as if he were walking on cotton. There was obstinate constipation, and finally as a result of repeated catheterization, cystitis. There was some loss of power in the lower extremities, some diminution of pain sense in the same region, and the knee-jerks were distinct. Otherwise the reflexes were normal. The patient finally died of the cystitis, which had become complicated by a pyelonephritis. The essential changes found in the central nervous system were: an area of degeneration in the whole circumference of the spinal cord, areas of perivascular sclerosis in the lateral and posterior columns, with secondary ascending and descending degeneration. In the brain there was slight leptomeningitis, and in the medulla, in addition to this, some perivascular sclerosis. The essential clinical symptoms were paresis without spasticity, preservation of the knee-jerks associated with symptoms of degeneration in the posterior columns. The case resembles somewhat the symptom complex described by Rothmann, but differs in the fact that there were some pupillary disturbances, that is, the pupils were contracted and reacted sluggishly to light. The character of the pathological changes was strongly in favor of a luetic process.

5. *Genito Urinary Nerve Supply.*—Müller contributes a long paper upon the innervation of the bladder, rectum and sexual organs. He reports a remarkable case of a man forty-eight years of age suffering from transverse myelitis, in which every three or four hours the urine was spontaneously discharged without any control by the patient's will, and in the intermediate no dribbling occurred. A somewhat similar case was observed in a woman who also had some transverse lesion in the dorsal portion of the spinal cord. In a man who had an old transverse myelitis of 16 years' standing a similar peculiar condition existed, and in another, a man thirty years of age suffering from multiple sclerosis, the urine also was spontaneously evacuated. In a girl suffering from the same disease urination occurred spontaneously not more than once or twice a day, and catheterization showed the presence of a large quantity of residual urine. In a patient suffering from disseminated myelitis, who as a result of repeated catheterization developed cystitis, the urine was discharged in moderate quantities every hour. There was also spontaneous evacuation of the rectum. Diseases of the conus do not appear to interfere with the urinary functions, but it is interesting to note that in diseases of the lower portion of the spinal cord the same phenomena may ensue, and therefore Müller is convinced that the center for the bladder and rectum lies external to the spinal cord. He mentions a number of cases of locomotor ataxia in which there were marked disturbances in urination and in the sexual functions. In these cases there is evidently some anesthesia of the bladder and rectum. He mentions 2 cases of combined systemic disease in which there were disturbances of micturition; that is to say, the bladder was evacuated involuntarily at frequent intervals throughout the day. Similar symptoms may occur in cases of hysteria. He has also performed some experiments upon dogs which consisted essentially in the removal of larger or small-

er portions of the spinal cord. The results confirm Müller's opinion that the functions of the bladder and rectum are vegetative in character, and are innervated chiefly from the sympathetic nervous system. The article contains some very valuable data regarding the investigation of the disturbances of these functions in diseases.

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1. Experiments with Non-isolation Treatment and Hydrotherapeutic Measures. W. ALTER.
2. Embarrassment under Observation. VON BECHTEREW.
3. New Toxic and Therapeutic Properties of the Blood-serum of Epileptics and their Practical Applications. CARLO CENI.
4. Comments on F. Nissl's Paper: "Hysterical Symptoms in Simple Mental Disturbances." ERNEST STORCH. Reply by F. NISSL.

1. *Non-isolation and Hydrotherapy.*—In the Leubas Asylum it has been the custom to isolate many of the chronic insane on account of violence, etc. Alter has succeeded in managing these cases in open wards through the systematic use of prolonged baths and packs. At first patients were kept in the bath at a temperature of 34° to 36° C. from 1½ to 3 or 4 hours; later in some cases the period was extended to 12 or 14 hours. Sometimes preliminary and adjuvant doses of paraldehyde, trional or chloral were employed to render the subject more tractable, but soon it was possible to dispense with drugs, the patient gaining in weight, becoming quiet and sleeping well.

2. *Embarrassment under Observation.*—Von Bechterew describes three neurasthenics in whom palpitation of the heart, confusion, weakness of the limbs, etc., lasting about five minutes, were prone to come on when anyone "caught the eye" of the patient. Bechterew formerly reported such a case in which this symptom of "Blickschen" coexisted with "forced laughter."

3. *Blood-serum of Epileptics.*—Ceni claims to have begun simultaneously with D'Abundo (1898) his study of the question whether the blood-serum from a bad case of epilepsy can modify the condition of a milder one. Of six epileptics studied, two showed symptoms of true poisoning from the injections, while in the others no effect was discerned. Ceni concluded from this that the blood-serum of epileptics contains no antitoxic substance in the true sense, but does contain a special poison. Whether the resistance of the organism to this special poison can be increased, perhaps to the point of rendering the subject immune to its effects, was then studied in two ways: first, the blood-serum of one epileptic was injected into another in increasing doses; second, a patient's blood-serum was re-injected into his own circulation some days later. Ceni was able to answer the question in the affirmative from the results of each of these methods. Of eight epileptics thus treated two showed toxic effects, but the others were greatly improved both as regards the motor manifestations of their disease, and as regards psychic and sensory symptoms, so that an actual cure may be hoped for in some cases. Ceni concludes that these properties reside in certain products of tissue-change which in life are attached to the formed elements of the blood and only after removal of the latter from the body become free in the serum from contact with the "outerworld;" so that in epileptics "a natural auto-immunization is not possible."